

Remarks

In response to the Office Action, no claims have been amended, newly added, or cancelled. Therefore, claims 1, 2, 4, 5, 7-20, and 24-30 remain pending, of which claims 17, 18, 24, and 25 are withdrawn from consideration. In view of the following comments, allowance of all the claims pending in the application is respectfully requested.

Request for Rejoinder

Claims 17 and 18 have been amended to recite a system for carrying and moving an object that corresponds to the system for carrying and moving an object of claim 1. Similarly, claims 24 and 25 have been amended to include a method for carrying and moving an object that corresponds to the method for carrying and moving an object of claim 19. In other words, claims 1 and 19 recite Bsp respectively and claims 17, 18, 24 and 25 recite ABsp respectively. Therefore, the claims are not restrictable. See MPEP §806.05(c)I. Rejoinder and allowance of claims 17, 18, 24, and 25 are respectfully requested.

Rejection Under 35 U.S.C. §103

Claims 1, 2, 4, 9-16, 19, 20, 26-28, and 30 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent Application No. 2002/0018195 to Iwamoto et al. ("Iwamoto") in view of U.S. Patent No. 6,144,119 to Hazelton ("Hazelton").

Applicant traverses.

Applicant submits that no prima facie case of obviousness has been established because (1) there is no teaching, suggestion, or reason to combine the cited portions of Iwamoto and Hazelton; and (2) the cited

portions of Iwamoto and Hazelton, even if combined, do not disclose, teach, or render obvious each and every aspect of the rejected claims.

Claim 1 recites a system for carrying and moving an object in a plane, comprising:

wherein the coil structure and the magnetic structure are positioned relative to each other and separated by an air bearing attached to the coil structure or the magnetic structure and configured to support said object carrier during motion at a first position along said first direction, the first position being on one end of whichever of the magnetic structure or coil structure is connected to the object carrier, and at a second position displaced from the first position along said first direction, the second position being on the opposite end of whichever of the magnetic structure or coil structure is connected to the object carrier, wherein the first and second positions and whichever of the magnetic structure or coil structure is connected to the object carrier are substantially in a same plane;

Pages 2 and 3 of the Office Action alleged that bearings 35, guide bar 29, and ¶ 61 of Iwamoto describe that the coil structure and magnetic structure are positioned relative to each other and separated by an air bearing configured to support said object carrier during motion at a first position along said first direction. However, pages 3 and 4 of the Office Action conceded that "Iwamoto et al. fail to show the air bearings being attached to the coil structure or the magnetic structure." In order to address this deficiency of Iwamoto, the Office Action turns to Fig. 2 and col. 7, lines 32-37 of Hazelton.

The cited portions of Hazelton appear to describe an air bearing separating coil array 16, 22 and magnet array 18, 24. However, there is no reasoned technical basis, based on proper evidence of record, to provide the air bearing of Hazelton attached to coils 24, 25 or magnets 26, 27 of Iwamoto. In particular, Iwamoto already provides bearings 35 under X-Y slider 38, and around X guide bar 28 and Y guide bar 29 (see Fig. 4B). The X-Y slider 38 is guided in the Z direction by bearing 35 along surface 4, and

in the X and Y directions by bearing 35 along X guide bar 28 and Y guide bar 29. See, e.g., ¶ 60 of Iwamoto. Accordingly, one of ordinary skill in the art would not provide an additional bearing attached to the coils 24, 25 or magnets 26, 27 and configured to support X-Y slider 38 during motion since air bearing 35 already supports X-Y slider 38 in the Z direction and guides X-Y slider 38 along X and Y guide bars 28, 29 in the X and Y directions. Thus, it appears that an additional bearing attached to the coils 24, 25 or magnets 26, 27 of Iwamoto would be unnecessary, and likely detrimental at least from a maintenance perspective, to position coils 24, 25 or magnets 26, 27 relative to each other and to support X-Y slider 38 during motion.

Furthermore, there is no reasoned technical basis, based on proper evidence of record, to relocate bearing 35 of Iwamoto from its current location to a location where it is attached to coils 24, 25 or magnets 26, 27 because doing so would make Iwamoto unsatisfactory for its intended purpose. In particular, bearing 35 allows X-Y slider 38 to "float" relative to surface 4 and X and Y guide bars 28, 29. As a result, it appears that X-Y slider 38 would harmfully contact surface 4, and X and Y guide bars 28, 29, if bearing 35 was instead attached to coils 24, 25 or magnets 26, 27. See, e.g., MPEP §2143.01(V) ("If the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. (citing In re Gordon, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)).

Additionally, neither the cited portions of Iwamoto nor Hazelton teach or suggest the arrangement of the air bearing, as recited in claim 1. For example, the cited portions of Iwamoto do not describe an air bearing attached to the coil structure or the magnetic structure. Even assuming *arguendo* that Iwamoto can be modified in view of the cited portions of

Hazelton to provide an air bearing attached to coils 24, 25 or magnets 26, 27 of Iwamoto (which Applicant does not concede), neither the cited portions of Iwamoto nor of Hazelton disclose, teach or suggest "...an air bearing attached to the coil structure or the magnetic structure and configured to support said object carrier during motion at a first position along said first direction...and at a second position displaced from the first position along said first direction, the second position being on the opposite end of whichever of the magnetic structure or coil structure is connected to the object carrier, wherein the first and second positions and whichever of the magnetic structure or coil structure is connected to the object carrier are substantially in a same plane," as recited in claim 1. In particular, the cited portions of Iwamoto and Hazelton appear to be silent with regard to an air bearing configured to support said object carrier during motion at a first position along said first direction and at a second position displaced from the first position along said first direction. In addition, the cited portions of Iwamoto and Hazelton appear to be silent with regard to the first and second positions and whichever of the magnetic structure or coil structure is connected to the object carrier being substantially in a same plane.

Claim 19 recites a method for carrying and moving an object in a plane, comprising:

...said first and second linear actuators being adapted to support said object carrier by having a coil structure and a magnetic structure that are separated by an air bearing attached to the coil structure or the magnetic structure and configured to support said object carrier during motion at a first position along said first direction, the first position being on one end of whichever of the magnetic structure or coil structure is connected to the object carrier, and at a second position displaced from the first position along said first direction, the second position being on the opposite end of whichever of the magnetic structure or coil structure is connected to the object carrier, wherein the first and second positions and whichever of the magnetic structure or coil structure is connected to the object carrier are substantially in a same plane,...

Page 6 of the Office Action applied the same grounds of rejection to claim 19 as applied to claim 1. As discussed above, there is no reasoned technical basis, based on proper evidence of record, to provide the air bearing of Hazelton attached to coils 24, 25 or magnets 26, 27 of Iwamoto. In particular, Iwamoto already provides a bearing 35 under X-Y slider 38, and around X guide bar 28 and Y guide bar 29 (see Fig. 4B). Accordingly, one of ordinary skill in the art would not provide an additional bearing attached to the coil structure or the magnetic structure when the additional bearing would be unnecessary and likely detrimental.

Furthermore, there is no reasoned technical basis, based on proper evidence of record, to relocate bearing 35 of Iwamoto from its current location to a location where it is attached to coils 24, 25 or magnets 26, 27 because doing so would make Iwamoto unsatisfactory for its intended purpose. In particular, bearing 35 allows X-Y slider 38 to "float" relative to surface 4 and X and Y guide bars 28, 29. As a result, it appears that X-Y slider 38 would harmfully contact surface 4, and X and Y guide bars 28, 29 if bearing 35 was instead attached to coils 24, 25 or magnets 26, 27.

Additionally, neither the cited portions of Iwamoto nor Hazelton teach or suggest the arrangement of the air bearing, as recited in claim 19. For example, the cited portions of Iwamoto do not describe an air bearing attached to the coil structure or the magnetic structure. Even assuming *arguendo* that Iwamoto can be modified in view of the cited portions of Hazelton to provide an air bearing attached to coils 24, 25 or magnets 26, 27 (which Applicant does not concede), neither the cited portions of Iwamoto nor Hazelton disclose, teach or suggest "...an air bearing attached to the coil structure or the magnetic structure and configured to support said object carrier during motion at a first position along said first direction...and at a second position displaced from the first position along said first

direction, the second position being on the opposite end of whichever of the magnetic structure or coil structure is connected to the object carrier, wherein the first and second positions and whichever of the magnetic structure or coil structure is connected to the object carrier are substantially in a same plane," as recited in claim 19. In particular, the cited portions of Iwamoto and Hazelton appear to be silent with regard to an air bearing configured to support said object carrier during motion at a first position along said first direction and at a second position displaced from the first position along said first direction. In addition, the cited portions of Iwamoto and Hazelton appear to be silent with regard to the first and second positions and whichever of the magnetic structure or coil structure is connected to the object carrier are substantially in a same plane.

For at least the reason that the cited portions of Iwamoto and Hazelton, either alone or in combination with one another, do not disclose, teach, or render obvious each and every aspect of claims 1 and 19, the rejection of claims 1 and 19 should be withdrawn. Claims 2, 4, 9-16, 20, 26-28 and 30 depend from claims 1 or 19 and therefore are allowable over the cited portions of Iwamoto and Hazelton for the reasons noted above with respect to claims 1 and 19 respectively, as well as for the features they recite individually.

Claims 5, 7, 8, and 29 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Iwamoto, in view of Hazelton, and further in view of U.S. Patent No. 5,519,266 to Chitayat ("Chitayat"). Applicant traverses.

Applicant submits that no prima facie case of obviousness has been established at least because the cited portions of Iwamoto, Hazelton, and Chitayat, even if properly combined, do not disclose, teach, or render

obvious each and every claim aspect. Even assuming *arguendo* that the cited portions of Iwamoto, Hazelton, and Chitayat are properly combinable (which Applicant does not concede), the cited portions of Chitayat do not appear to address all the deficiencies of the cited portions of Iwamoto and Hazelton as set forth above with regard to claims 1 and 19. For example, the cited portions of Chitayat do not appear to describe an air bearing attached to the coil structure or the magnetic structure, and the particular arrangement of the air bearing, as recited in claims 1 and 19. Claims 5, 7, 8, and 29 depend from claims 1 and 19 and therefore are allowable over the cited portions of Iwamoto, Hazelton and Chitayat for the reasons noted above with respect to claims 1 and 19, as well as for the features they recite individually.

For at least the reason that the cited portions of Iwamoto, Hazelton, and Chitayat, either alone or in combination with one another, do not disclose, teach, or render obvious each and every aspect of claims 5, 7, 8, and 29, the rejection of claims 5, 7, 8, and 29 should be withdrawn.

Conclusion

Having addressed each of the foregoing rejections, it is respectfully submitted that a full and complete response has been made to the outstanding Office Action and, as such, the application is in condition for allowance. Notice to that effect is respectfully requested.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

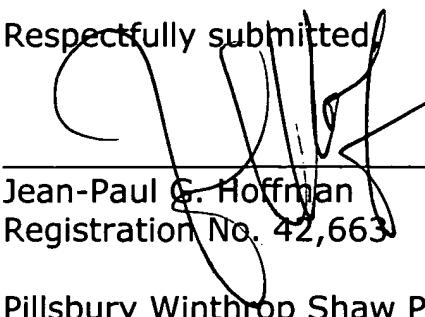
If an extension of time is necessary to prevent abandonment of this application, then such an extension of time is hereby petitioned for under 37 C.F.R. §1.136(a), and any fees required therefor (including fees for net

addition of claims) are hereby authorized to be charged to our Deposit Account No. 033975 (Ref. No. **081468-0308590**).

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By:

Respectfully submitted,


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